DEC 17 1982

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

295 NORTH MAPLE AVENUE
BASKING RIDGE, NEW JERSEY 07920

DRAWING NOTICE

TITLE
STEP-BY-STEP SYSTEMS
NO. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

SD-31865-01 ISSUE 13D
CD ISSUE 2D APPX 7B ADD.
RATING A&M ONLY
SYSTEM STEP-BY-STEP

DATE MAY 19 1982
DRAWING DISTRIBUTION CODE: 2D99
CLEI BASIC CODE:

DESCRIPTION

6.1 INCOMING TRUNK CIRCUIT

(a) FUNCTIONAL DESCRIPTION OF CHANGE: This is a drafting change only to make this circuit diagram agree with the manufacturing drawings.

(b) EXTENT OF CHANGE: none

(c) COORDINATING CIRCUIT CHANGES: none

(d) EQUIPMENT INFORMATION: not affected

(e) EQUIPMENT DESIGN REQUIREMENTS: not affected.

(f) ENGINEERING COMPLAINT: No. PNO-1096

(g) TRANSMISSION: not affected

(h) TRAFFIC: not affected

6.2 This change covers only drafting corrections.

6.3 SUPPLEMENTARY INFORMATION

(a) DIRECT CURRENT DRAIN DATA: is not affected

(b) ALTERNATING CURRENT DRAIN DATA: is not affected

6.4 AFFECTED SHEETS

(a) REISSUED: A, 1 (TOTAL REISSUED: 2)

E-1077 (2-81)

CIRCUIT DESCRIPTION

CD-31865-01
ISSUE 2D
APPENDIX 7D
DWG ISSUE 13D
DISTN CODE 2D99

AUG 18 1982

STEP-BY-STEP SYSTEMS
NO. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

CHANGES

D. Description of Changes

D.01 The following changes were made on a D no-record basis:

(a) A connection was added between lead S and spring 6T of relay CT.

(b) The coil terminal 7T was changed to 8T on relay R.

(c) The numbering on contacts 1-2-3 bottom of relay R was clarified.

(d) The code of resistor A was corrected to 19GN and the 500 value changed to 600.

(e) The J33013AY is lined out in the supporting information table.

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DEPT 55212-NAR

WE DEPT 45240-RWK-TMO-AJN

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
295 NORTH MAPLE AVENUE
BASKING RIDGE, NEW JERSEY 07920

U2116

DRAWING NOTICE

TITLE
STEP-BY-STEP SYSTEMS
NO. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

SD-31865-01 ISSUE 12B
CD ISSUE 2D APPX 6B ADD.
RATING A&M ONLY
SYSTEM STEP-BY-STEP
DATE AUG 27 1981
DRAWING DISTRIBUTION CODE: 2D99
CLEI BASIC CODE:

DESCRIPTION

6.1 INCOMING TRUNK CIRCUIT

(a) FUNCTIONAL DESCRIPTION OF CHANGE: The use of the D4 timer for the integrity check function (Fig 3) is rerated "MFR DISC".

The connecting information for the application of the D49 timer for the integrity check function is added.

(b) EXTENT OF CHANGE: The D49 timer (new) has the timer and associated relay on a printed wiring board.

(c) COORDINATING CIRCUIT CHANGES: SD-35077-01 Issue 1.

(d) EQUIPMENT INFORMATION: not affected

(e) EQUIPMENT DESIGN REQUIREMENTS: available 4Q81, J33013 BSP section 814-520-150, Iss 13, Add 1.

(f) TRANSMISSION: not affected

(g) TRAFFIC: not affected

6.2 This change also covers drafting corrections.

6.3 SUPPLEMENTARY INFORMATION

(a) DIRECT CURRENT DRAIN DATA: is affected but negligible.

(b) ALTERNATING CURRENT DRAIN DATA: is not affected.

DEC 2 2 1981

CIRCUIT DESCRIPTION

mm

CD-31865-01
ISSUE 2D
APPENDIX 6B
DWG ISSUE 12B
DISTN CODE 2D99

STEP-BY-STEP SYSTEMS
NO. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

CHANGES

D. Description of Changes

D.01 Figure 3 is rerated Mfr Disc.

D.02 Option N is added.

D.03 Circuit Notes 102 and 103 are changed.

D.04 The potential on the center post of resistor A is changed from ground to battery on a D no-record basis to agree with the manufacturing information.

D.05 Equipment Note 202 is rated Mfr Disc. and Note 203 is added.

D.06 Circuit Note 105 is rerated Mfr Disc.

D.07 CAD Fig. 56 is changed and CAD Fig. 57 is rated Mfr Disc.

F. Changes in Description of Operation

F.01 Under 4. CONNECTING CIRCUITS, add the following:

4.9 Delay Dial or Integrity Check Timing Circuit - SD-35007-01.

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DEPT 55213-DAJ

WE DEPT 45230-RWH-JTT-PG

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295 NORTH MAPLE AVENUE
BASKING RIDGE, NEW JERSEY 07920

02059

DRAWING NOTICE

OCT 2 1 1980 JMG

TITLE

STEP-BY-STEP SYSTEMS
NO. 1, 350A OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OT SIMPLEX SIGNALING

SD-31865-01 ISSUE 11B
CD ISSUE 2D APPX 5B ADD.
RATING A&M ONLY
SYSTEM STEP-BY-STEP

DATE APR 24 1980
DRAWING DISTRIBUTION CODE: 2D99

DESCRIPTION

6.1 TOLL GRADE BATTERY REMOVAL

1. Figure E is added to permit Figure A to be modified to local grade battery feed by the addition of resistors rather than replacing relay "S" with "A" high resistance relay. This change is to be used only for field modification.
2. Contact protection networks are added to relays TR and SR as Option R. These networks should be added when a new Figure 3 is added or an existing Figure 3 is upgraded to a Series 3 or higher D4 timer.
3. A combination of a zenier diode and resistor is added to the M lead to provide the required surge protection.
4. The code of the A capacitor was changed to furnish a precision capacitor to improve transmission. This change was made on a line out basis.
5. The working limits were added to lead E.

(b) EXTENT OF CHANGE: Toll grade battery removal-2 KS14603-L5CA 178 OHM resistors, 185A contact protection networks for relays TR and SR, M lead protection - 808BJ type zenier diode and a KS20810L1A 1000 OHM resistor, capacitor A is changed from Code 437A to Code 437 QA.

(c) COORDINATING CIRCUIT CHANGES: none

(d) EQUIPMENT INFORMATION: not affected

(e) EQUIPMENT DESIGN REQUIREMENTS: not affected

(f) TRANSMISSION: not affected

(g) TRAFFIC: not affected

6.2 This change also covers design improvement - no added service, testing, or maintenance features.

6.3 SUPPLEMENTARY INFORMATION

(a) DIRECT CURRENT DRAIN DATA: is not affected

(b) ALTERNATING CURRENT DRAIN DATA: is not affected

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295 NORTH MAPLE AVENUE
BASKING RIDGE, NEW JERSEY 07920

DRAWING NOTICE

02059

TITLE

STEP-BY-STEP SYSTEMS
NO. 1, 350A or 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

SD-31865-01 ISSUE 10B
CD ISSUE 2D APPX 4B ADD.
RATING A&M ONLY
SYSTEM STEP-BY-STEP

DATE APR 24 1980
DRAWING DISTRIBUTION CODE: 2D99
CLE BASIC CODE:

DESCRIPTION

6.1 TOLL GRADE BATTERY REMOVAL

(a) FUNCTIONAL DESCRIPTION OF CHANGE: An improvement is added to reduce the transmitter current at the station set, under a short loop condition. The higher currents previously furnished have caused failures in the operation of present Touch-Tone ® sets and could cause failures in the new electronic station sets.

Figure A is designated and rated "MFR DISC" and Figure B trunk circuit is modified.

(b) EXTENT OF CHANGE: A G114 type relay is required per trunk circuit

(c) COORDINATING CIRCUIT CHANGES: none

(d) EQUIPMENT INFORMATION: affected, covered by WE drawing J33013AR-( ).

(e) EQUIPMENT DESIGN REQUIREMENTS: not affected

(f) TRANSMISSION: not affected

(g) TRAFFIC: not affected

6.2 SUPPLEMENTARY INFORMATION

(a) DIRECT CURRENT DRAIN DATA: is not affected

(b) ALTERNATING CURRENT DRAIN DATA: is not affected

JUN 3 1980
jmG

CIRCUIT DESCRIPTION

CD-31865-01
ISSUE 2D
APPENDIX 5B
DWG ISSUE 11B
DISTN CODE 2D99

STEP-BY-STEP SYSTEMS
NO. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

CHANGES

B. Changes In Apparatus

B.01 Added

M Zener Diode, 808BJ, Option Q

A1, A2 Resistors, KS-14603 L5CA, 178, Fig. C

M Resistor, KS-20810 L1A, 1000, Option Q

SR and TR Network, 185A, Option R

B.02

Superseded	Superseded By
4μF, 437A Capacitor Fig. A, B, C	4.28 through 4.36 μF, 437QA Capacitor, Fig. A, B, C

D. Description Of Changes

D.01 Figure C is added for a field modification of Fig. A to local grade battery feed.

D.02 Manufactured Disc. is added to Fig. A.

D.03 Capacitor A is changed to a precision type capacitor.

D.04 Connecting information on leads T, R, A, B, E, and M is changed to show "to transmission and signaling facilities".

D.05 Circuit Notes 102 and 103 are changed.

D.06 Circuit Notes 104, 105, and 106 are added.

D.07 Contact protection networks are added to relays SR and TR or Fig. 1.

D.08 Figure 3 is changed to show new series of D4 timer.

D.09 Lead E Working Limits are added.

D.10 Contact protection is added to lead M.

D.11 All CADs are changed to reflect connecting information change. The CAD 56 and 57 are changed to correct them to agree with manufacturing information.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5413-DAJ

WE DEPT 45230-RWH-JTT-CLB

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JUN 3 1980
JMG

CIRCUIT DESCRIPTION

CD-31865-01
ISSUE 2D
APPENDIX 4B
DWG ISSUE 10B
DISTN CODE 2D99

STEP-BY-STEP SYSTEMS
No. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

CHANGES

B. Changes in Apparatus

B.01	Superseded	Superseded By
	G98 Relay, Fig. A	G114 Relay, Fig. B

D. Description of Changes

D.01 Figure A is added and rated Mfr Disc.

D.02 Figure B is added and rated Standard to reduce the transmitter current under short loop conditions.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5242-DAJ

WE DEPT 45230-RWH-JTT-MAF

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

195 BROADWAY, NEW YORK 7

SD-31865-01 **ISSUE** 9B
CD 2D **APP.** 3B
RATING A & M Only
SYSTEM Step-by-Step
DATE May 19, 1964

DRAWING NOTICE

TITLE

Step-by-Step Systems - No. 1, 350A OR 355A - INCOMING TRUNK CIRCUIT - To toll Incoming Selector - Composite Signaling Type B - Or Simplex Signaling

DESCRIPTION

6.1 Fig. 3 is added to provide a timed off-hook signal of approximately 150 milliseconds when this trunk is associated with a No. 4 type toll crossbar office.

6.11 This change requires the addition of a relay, a diode, and a D4 circuit pack timer and a minor change in wiring.

6.2 This circuit is rated "A & M ONLY" in accordance with the program for the elimination of toll trains as outlined in P. E. L. 6073 of 7/15/57.

6.21 The rating change shall be applied on a D basis.

6.3 The Current Drain Data for this circuit is not affected by changes on this issue.

6.4 B change. Requires WECo. notification to Tel. Co.

6.5 Equipment information will be covered by drawing LJ33013AY Issue 1.

6.6 Equipment Design Requirements will be covered in B.S.P. Section AA231.823 (J33013) Issue 6 Appx. 3.

No engineering letter will be issued.

STEP-BY-STEP SYSTEMS
NO. 1, 350A OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

CHANGES

A. Changed and Added Functions

A.1 To provide an off-hook signal of approximately 150 msec on initial seizure to establish trunk integrity when this trunk is associated with a No. 4A or 4M toll crossbar office arranged for trunk integrity check.

B. Changes in Apparatus

B.1 ADDED

Fig. 3

D. Description of Changes

D.1 Circuit Note 103 is changed to cover the application of Fig. 3.

D.2 Fig. 56 is changed and Fig. 57 and Equipment Note 202 are added to provide for the addition of Fig. 3

D.3 The rating of this circuit is changed from AT&TCo Std to A&M Only. The use of separate toll trains is now rated A&M Only.

F. Changes in Description of Operation

F.1 Under 3, FUNCTIONS, add:

3.10 To provide a timed off-hook signal as a trunk integrity check when this trunk is associated with a No. 4A or 4M toll crossbar office.

F.2 Under 4, CONNECTING CIRCUITS, add:

4.8 Circuit Pack Schematic (Timer) - SD-99355-01.

F.3 Under DESCRIPTION OF OPERATION, add:

5.1 Timer Off-Hook Signal - Fig. 3

When Fig. 3 is used, this circuit provides a timed off-hook signal on seizure to the incoming sender in a No. 4A or 4M toll crossbar office. This is used as an integrity check before connections are established. When this circuit is seized as described in 5, the operation of the SR relay applies ground through diode D to terminal 3 of the circuit pack timer. The timer connects this ground through a resistor to terminal 1 for an interval of approximately 150 msec. This operates and releases the D relay which applies battery then ground to the M lead, signaling the distant office.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 2363-TPS-RJJ

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JUN 15 1961

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
195 BROADWAY, NEW YORK 7

DRAWING NOTICE

SD-31865-011-012 ISSUE 8B
CD 2D APP. 2B
RATING AT&TCo Std.
SYSTEM Step-By-Step
DATE February 16, 1961

TITLE

Step-By-Step Systems - No. 1, 350A Or 355A - Incoming Trunk Circuit - To Toll Incoming Selector - Composite Signaling Type B - Or Simplex Signaling

DESCRIPTION

6.1 This circuit is reissued to put a timing adjustment on the (R) relay. This will insure the ringing of the called party.

6.2 The Current Drain Data for this circuit is not affected by changes on this issue.

6.3 Equipment information is not affected.

6.4 Equipment Design Requirements are not affected.

No engineering letter will be issued.

CIRCUIT DESCRIPTION

CD-31865-01
Issue 2D
Appendix 2B
Dwg. Issue 8B

STEP-BY-STEP SYSTEMS
NO. 1, 350A, OR 355A
INCOMING TRUNK CIRCUIT
TO TOLL INCOMING SELECTOR
COMPOSITE SIGNALING TYPE B
OR SIMPLEX SIGNALING

CHANGES

0.1 A timing requirement is added to the (R) relay on page one on the Circuit Requirement table.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2335-MPC-FBB-GM

FEB 20 1957

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
195 BROADWAY, NEW YORK 7

SD-31865-011
-012
CD 2-D
ISSUE 7-D
APP. 1-D
RATING AT&TCo Std.
SYSTEM Step-By-Step - Ckt.
DATE November 26, 1956

DRAWING NOTICE

TITLE

Step-By-Step Systems - No. 1, 350A Or 355A - Incoming Trunk Circuit - To Toll Incoming Selector - Composite Signaling Type B - Or Simplex Signaling.

DESCRIPTION

6.1 This circuit is reissued to rate Figs. 51 and 52 "Mfr. Disc." since the associated equipment is so rated and to revise Fig. 56 to include connection to 355A offices.

6.2 Current Drains are not affected.

6.3 Equipment information is not affected.

6.4 Equipment Design Requirements are not affected.

No engineering letter will be issued.

FEB 20 1957

CIRCUIT DESCRIPTION
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT

CD-31865-01
Issue 2D
Appendix 1D
Dwg. Issue 7D

STEP BY STEP SYSTEMS
NO. 1, 350A OR 355A INCOMING TRUNK CIRCUIT TO TOLL INCOMING SELECTOR COMPOSITE SIGNALING TYPE B OR SIMPLEX SIGNALING

CHANGES

B. CHANGES IN APPARATUS

B.1 Superseded	Superseded By
448A (T) Jk. "V" Option	395B (T) Jk. "U" Option

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The use of Figs. 51 and 52 is rated Mfr. Disc. and Fig. 56 is revised to include connection to 355A offices.

D.2 Equipment Note 201 is rated Mfr. Disc.

D.3 Options "U" and "V" and the Options Used table are added and reference is added in Note 102.

D.4 The use of "V" option is rated Mfr. Disc. and is superseded by "U" option to concur with the latest equipment information.

D.5 "Misc. Alarm Ckt. - Register Ckt." is added as connecting information for the "BR" lead in Fig. 1.

All other headings, no change.

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DEPT. 2315-WAO'C-RCD-CS

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DEC 31 1956

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

195 BROADWAY, NEW YORK 7

SD-31865-011-012 ISSUE 6-D
CD 2-D APP.
RATING AT&T Co. Std.
SYSTEM Step-By-Step - Ckt.
DATE August 15, 1956

DRAWING NOTICE

TITLE

Step-By-Step Systems - No. 1, 350A Or 355A - Incoming Trunk Circuit - To Toll Incoming Selector - Composite Signaling Type B - Or Simplex Signaling

DESCRIPTION

6.1 This circuit is reissued to incorporate idle line termination features for use with voice repeater equipment.

6.2 Current Drains are as follows:

Current Drain in Ampere Hours Per Busy Hour

48V

	List 1 Talk Batt.	List 2 Talk Batt.	F.B. Grd.
Where List 1 & 2 are seperate	.123	.170	.290
	List 1 & 2		
Where List 1 & 2 are combined	.123		.211

Note

When Fig. 2 is required the following drains should be added:

48V

List 1		List 2	
Talk Bat.	F.B. Grd.	Talk Bat.	F.B. Grd.
.007	.007	.011	.011

6.3 Equipment information will be covered by J33013AR-( ).

6.4 Equipment Design Requirements will be covered in BSP Section AA231.823 (J33013), Iss. 3, Appx. 3.

No engineering letter will be issued.

DEC 31 1956

CIRCUIT DESCRIPTION
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT

CD-31865-01
Issue 2-D
Dwg. Issue 6-D

STEP BY STEP SYSTEMS
NO. 1, 350A or 355A
INCOMING TRUNK CIRCUIT TO TOLL INCOMING SELECTOR COMPOSITE SIGNALING TYPE B OR SIMPLEX SIGNALING

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 A line termination network is bridged from tip to ring leads until the circuit is seized.

B. CHANGES IN APPARATUS

B.1 Added

U185 (TR) Relay, Fig. 2
2MF (F) Capacitor, Fig. 2
910Ω (F) Resistor, Fig. 2

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPARATUS

C.1 Note 5, page 1 is added to permit test of (CT) relay where Fig. 2 is used.

C.2 Note 6, page 1 is added to block (TR) non-operated during tests where Fig. 2 is used.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Fig. 2 is added to provide a line termination network until the circuit is seized.

D.2 Note 103 is added to show the use of Fig. 2.

All other headings under Changes, no change.

1. PURPOSE OF CIRCUIT

1.1 This circuit provides a direct connection between a CX signalling type B or SX signalling trunk and a toll incoming selector.

2. WORKING LIMITS

2.1	Coin	Noncoin
Max. Ext. Ckt. Loop	1,500 Ohms	1,500 Ohms
Min. Ins. Res.	10,000 "	10,000 "
Max. Earth Potential	+ 20 V.-15 V.	+ 20 Volts

3. FUNCTIONS

3.1 To receive pulses from a CX or SX signalling trunk and repeat them on a loop basis into a toll incoming selector and subsequent switches.

3.2 To provide a path for connecting ground forward to hold the succeeding switches.

3.3 To transfer from the pulsing to the transmission condition when the terminals of the called line have been reached.

3.4 To start machine ringing in the associated toll connector when the latter switch cuts through to the called line terminals.

3.5 To provide toll grade transmitter battery supply to the called subscriber.

3.6 To provide switchboard supervision to the calling operator.

3.7 To provide means for testing the pulse repeating relay.

3.8 To provide all trunks busy registration.

3.9 To provide line termination until seizure.

4. CONNECTING CIRCUITS

When this circuit is shown on a key sheet, the connecting information thereon shall be followed.

4.1 Toll Incoming Selector - SD-31744-01.

4.2 CX Signalling Circuit Type B.

4.3 SX Signalling Circuit - SD-95051-01.

4.4 Traffic Register Circuit - SD-30896-01.

4.5 Repeating Coil and Compromise Network Circuit - SD-95015-01.

4.6 Repeating Coil Circuit - SD-95015-01.

4.7 Step-by-Step Pulsing Test Set - SD-31481-01.

DESCRIPTION OF OPERATION

5. SEIZURE AND PULSING

When the CX or SX signalling circuit seizes this trunk by connecting ground to

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the "E" lead, (A) operates to operate (R) and (SR). (SR) connects ground forward to the "S" lead, opens a multiple ground on the "BR" lead to the register circuit, prepares the operating and locking circuit of (CT), closes the "T" and "R" through to the (CT) relay contacts, and operates the TR relay to remove the line termination network. (R) operated, locks to the "C" lead from ground furnished by (SR) on the "S" lead through a break contact of a relay in the succeeding switch, opens the "T" and "R" talking path from the succeeding switch, closes the pulsing contact of the (A) to the "T" and "R" to the incoming selector and closes the operating circuit of (CT). (CT) locks to (SR), opens the operating circuit of (R), closes the "T" and "R" of the trunk to break contacts on the (R), and prepares a circuit to connect ground to the "C" lead to provide a locking circuit for the toll connector tripping relay when the (R) releases.

6. CUT THROUGH AND RINGING START

When the associated toll connector cuts through to the terminals of the called line, the connection between the "C" and "S" leads is opened in the connector which allows the (R) to release. (R) is slow releasing to allow the tripping relay in the connector to release before reconnecting the "S" to the "C" lead. The relay released in the connector, connects ringing current to the called line. (R) released, opens the operating circuit of (CT) which remains locked to (SR). The release of (R) connects the "C" to the "S" lead to provide a locking path for the tripping relay in the toll connector. (R) released transfers the outgoing "T" and "R" from the pulsing contacts of the (A) to the repeating coil circuit, (S) relay and (B) ballast lamp to provide toll grade transmitter battery supply to the called station. The succeeding switches are held from ground supplied forward over the "S" lead. When the called subscriber answers, the (S) operates and disconnects ground and connects battery through the (A) lamp to the "M" lead to give the calling operator off-hook supervision.

7. DISCONNECT

When the called subscriber disconnects, (S) releases and disconnects battery and connects ground to the "M" lead to give the calling operator on-hook supervision. When the calling operator disconnects, the CX or SX signalling circuit removes ground from the "E" lead which releases (A), thereby releasing (SR) which removes ground from the "S" lead to permit the succeeding switches to release, unlocks (CT), opens the outgoing tip and ring and releases TR to replace the line termination network. (CT) released reconnects ground to the "BR" lead, opens the connection between the "C" and "S" leads and recloses in part the operating circuit of (R) in preparation for the next call. When the (CT) released, the circuit is restored to normal.

8. TEST JACKS

The (T) jack provides means for connecting to the trunk for pulsing and trunk operation tests.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2315-AWK-RCD-DE